

2/2 021 UNCLASSIFIED PROCESSING DATE--13NOV70  
CIRC ACCESSION NO--AP0117691  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CHANGES IN THE RESTING POTENTIAL, NA PRIME POSITIVE AND K PRIME POSITIVE CONCN., AND THE SIZE OF THE INULIN SPACE WERE MEASURED IN FROG ILEOFIBULARIS MUSCLE OF RANA TEMPORARIA IN RINGER SOLN. 0.22M IN GLYCEROL OR UREA AND AFTER WASHING OUT NONELECTROLYTES. INCUBATION WITH 0.22M GLYCEROL DECREASED THE WET WT. AND INULIN SPACE BY 11 AND 7-11PERCENT, RESP., AND THE NA PRIME POSITIVE OCNTENT BY 10PERCENT. REST POTENTIAL OF THE ISOLATED FIBERS AND AMT. OF IONS IN THE FIBER H SUB2 O OF THE GLYCEROL SOLNS. DID NOT DIFFER FROM CONTROL LEVELS IN RINGER SOLN. AFTER WASHING OUT OF THE NONELECTROLYTES, THE INTRACELLULAR K DECREASED SIGNIFICANTLY, BUT THE AMT. OF NA PRIME POSITIVE WAS RESTORED AND AFTER 2 HR EXCEEDED THE CONTROL LEVEL. THE REST POTENTIAL CHANGED IN ONLY 30PERCENT OF THE FIBERS STUDIED AND BY THE 30TH MIN DECREASED BY 20-30 MV. GLYCEROL AND UREA IN FROG SKELETAL MUSCLE SEEM TO INTERACT SPECIFICALLY AND NONSMOTICALLY WITH EXTRACELLULAR RATHER THAN INTRACELLULAR H SUB2 O IN THE MUSCLES.  
FACILITY: LAB. CELL. PHYSIOL., INST. CYTOL.,  
LENINGRAD, USSR.

UNCLASSIFIED

1:2 - 011  
UNCLASSIFIED  
TITLE--SYNTHESIS AND DETERMINATION OF THE LATTICE PARAMETERS OF NEW OXIDES  
OF COMPLEX COMPOSITION WITH PEROVSKITE STRUCTURE -U-  
AUTHOR-(05)-FILIPYEV, V.S., FESENKO, YE.G., DEVLIKANOVA, R.U., ZHAVORONKO,  
G.P., SHVOM, YE.A.  
COUNTRY OF INFO--USSR

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SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(1), 179-81

DATE PUBLISHED-----70

SUBJECT AREAS--EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--MINERAL, OXIDE, CRYSTAL LATTICE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1984/0148

ACCESSION NO--AP0054944  
INCLASSIFIED

STEP NO--UR/0363/70/006/001/0179/0181

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CIRC ACCESSION NO--AP0054944 UNCLASSIFIED PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN THE COMPOS. CA SUB3 TA SUB2 CDO SUB9 AND CA SUB3 TA SUB2 CAO SUB9 (CA SUB4 TA SUB2 O SU89), A NEW TYPE OF PEROVSKITE LATTICE DISTORTION WAS OBS'D. IN CONTRAST TO THE KNOWN TRICLINIC DISTORTION, THE PEROVSKITE LATTICE OF THESE COMPOS. IS OBTAINED FROM A SUPPLEMENTARY MONOCLINIC DISPLACEMENT ALONG THE LONG DIAGONAL OF THE BASE.

UNCLASSIFIED

USSR

UDC 621.375.82

DMITRIYEV, V. G., YERSHOV, A. G., ZUDKOV, P. I., SHARIF, G. A., SHVOM, Ye. M.  
"Generation of Optical Harmonics in a Pulsed Mode With a High Pulse Repetition Frequency"

V sb. Kvant. elektronika (Quantum Electronics), No. 1, Moscow, 1971, pp 116-119  
(from RZh-Fizika, No 7, Jul 71, Abstract No 7D936)

Translation: The generation of second, third, and fourth cutical harmonics of the radiation of a YAG:Nd laser operating in a pulsed mode with Q-modulation with a high pulse repetition frequency was investigated experimentally. There was found a high stability of ultraviolet radiation intensity at the wavelength 266 nm. Authors abstract.

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USSR

UDC: 621.373:530.145.6

DMITRIYEV, V. G., YERSHOV, A. G., ZUDKOV, P. I., SHARIF, G. A., SHVOM, Ye. M.

"Emission of Optical Harmonics in the Pulse Mode With a High Pulse Repetition Frequency"

V sb. Kvant. elektronika (Quantum Electronics--collection of works), No 1, Moscow, 1971, pp 116-119 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5D174)

Translation: The paper presents the results of an experiment on generation of the second, third and fourth optical harmonics of emission from an aluminum-yttrium garnet laser with neodymium working in the pulse mode with Q-switching at a high pulse repetition frequency. It is noted that the intensity of ultraviolet emission on a wavelength of 266 millimicrons is extremely stable. One illustration, one table, bibliography of eight titles. Resumé.

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USSR

Waveguides

LDC 621.372.85(088.6)

SHVORINA, I. M., MALORATSKIY, L. G., PAKHOMOV, I. M.

"Waveguide-Band Power Divider"

USSR Author's Certificate No 254598, Filed 25 Dec 67, Published 11 Mar 70  
(from RZh-Radiotekhnika, No 9, Sep 70, Abstract No 9B153P)

Translation: The proposed power divider contains a symmetrical ribbon line and a waveguide shorting plug. In order to decrease the losses and simplify the design, two coaxial waveguide holes are cut in the screen plates of the ribbon line. The design of the wide walls of the holes is perpendicular to the plane of symmetry of the ribbon line, and it is symmetrical with respect to the conducting axis of the band. There is one illustration.

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1/2 021

UNCLASSIFIED

PROCESSING DATE--16OCT70

TITLE--A NONLINEAR CERAMIC DIELECTRIC -U-

AUTHOR--(05)--DIDKOVSKAYA, O.S., ZHABKINA, G.I., BRONNIKOV, A.N., SHVORNEVA,  
L.I., KLIMOV, V.V.  
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 262,201

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--26JAN70

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SUBJECT AREAS--MATERIALS

TOPIC TAGS--PATENT, CERAMIC DIELECTRIC, NONLINEAR SYSTEM, LEAD, TITANATE,  
STRONTIUM, ZINC OXIDE, CALCIUM

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1990/1784

CIRC ACCESSION NO--AA0109745

STEP NO--UR/0402/70/000/000/0000/0000

UNCLASSIFIED

2/2 021

CIRC ACCESSION NO--AA0109745

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FROM OTDRYTIYA, IZOBRET., PRCM.  
OBRAZTSY, TOVARNYE ZNAKI 1970, 47(6), 42. THE TITLE DIELEC. CONTAINS A  
SOLID SOLN. OF A PB TITANATE AND SR TITANATE, 1-30 MOLE PERCENT ZN OXIDE  
(OR TITANATE) AND SMALLER THAN 45 MOLE PERCENT CA TITANATE.

UNCLASSIFIED

USSR

UDC 621.372.413

VENEVSEV, Yu. N., KARNAUKH, A. I., SHVORNEVA, L. I.

"Tuning a Hollow Resonator by a Nonlinear Dielectric"

Elektron. tekhnika. Nauchno-tekh. sb. Elektron. SVCh (Electronic Engineering, Scientific and Technical Collection. Superhigh-Frequency Electronics), 1970, vyp. 5, pp 49-58 (from RZh-Radiotekhnika, No 8, Aug 70, abstract No 8B161)

Translation: This article contains an investigation of toroidal and rectangular resonators with a nonlinear dielectric in the paraelectric phase filling the capacitive gap of the resonator. On the basis of replacing the resonator by an equivalent circuit in the form of two long lines, one of which is loaded with a nonlinear capacitance, the resonance wavelength of the resonator and the range of its application under the effect of a controlling field on the dielectric are calculated. The results of the calculations agree well with the experimental results. There are ten illustrations and a ten-entry bibliography.

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USSR

S UDC 621.391.833.44:621.317.757(088.3)

MAKHORIN, YE. G., SKVORTSOV, V. S., UTKIN, YU. I.

"Analyzer of the State of an Exchange Network by Discrete Relations"

USSR Author's Certificate No 218209, Filed 20 Mar 67, Published 26 Jan 70  
(from RZH-Radiotekhnika, No 9, Sep 70, Abstract No 9D31P)

Translation: An analyzer containing a circuit for recording received signals with a "third" solution is proposed. In order to decrease the probability of false isolation of a "network busy" signal in the presence of noise at the analyzer input, the output of the recording circuit with a "third" solution is connected via the channel to the input of the counter which counts the number of distorted characters. The output of this counter is connected via the coincidence circuit to the output of the device and, simultaneously, it is connected via the forbidden circuit, a waiting time delay line and a delay line amounting to the time of entry into synchronism, to the unlocking input of the gate and to the input of the analysis time delay line. The output of the latter is connected simultaneously to the blocking input of the gate, the clearing input of the counter, the second input of the comparison circuit and the recording input of the forbidden circuit. The starting input of the device is connected to the input of the delay line for the time of entry into synchronism.

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USSR

UCC 621.357.7.035.2:669.245!

AVEREUKH, M. YE., VAKHIDOV, R. S., and SHVYDKAYA, L. I.

779

"Change in the Acidity of the Outer Cathode Layer in the Process of Electro-deposition of a Nickel-Phosphorus Alloy"

Alma-Ata, Khimiya i Khim. teckhnol. (Chemistry and Chemical Technology) No 2, 1971, pp 155-159 (from Referativnyy Zhurnal -- Khimiya, No 7, 1973, Abstract No 7L391)

Translation: Using an antimony microelectrode, the change in the acidity of the outer cathode layer during the process of the electrodeposition of a Ni-P alloy from the following electrolyte was examined (concentrations in moles/l):  $\text{NiSO}_4$ , 0.64;  $\text{NaH}_2\text{PO}_2$ , 0.24;  $\text{H}_3\text{BO}_3$ , 0.32;  $\text{NaCl}$ , 0.34; and different amounts of  $\text{H}_3\text{PO}_4$  or  $\text{H}_2\text{SO}_4$  at a pH of 1.0 to 3.2. Conditions of the electrolysis were:  $D_k$ , 0.05-0.5 a/cm<sup>2</sup> and temperature, 30-90°C. It was established that in all of the conditions studied the outer cathode layer of the electrolyte became more alkaline.

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SSSR

UDC 546.621'86:539.238

PALATNIK, L. S., BOGATOV, P. N., MARINCHEVA, V. Ye., TOSSTONOG, V. A., and  
SAVYDKIV, I. D., Khar'kov Polytechnical Institute imeni V. I. Lenin

"Preparation and Properties of Condensed AlSb Films"

Moscow, Izvestiya Akademii Nauk SSSR, Neorganicheskiye Materialy, Vol 6, No 6,  
Jun 70, pp 1086-1089

Abstract: Results are reported on an investigation of the electrical properties of condensed AlSb films (thickness, 5-30 $\mu$ ) produced by a method previously described by one of the authors (Palatnik). AV000 aluminum and SyG antimony were used for the preparation of AlSb. An analysis of the condensates shows that when the method of synchronous condensation of the elements of the compound is used, films prepared at temperatures  $\geq 500^{\circ}$  C have semiconductor properties and the compound produced is close to the stoichiometric.

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1/2 014 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--THE BINDING OF RADIOACTIVE ISOTOPES BY COMPONENTS OF THE SKIN -U-  
AUTHOR--(04)-SHVYOKO, N.S., ILIN, L.A., NORETS, T.A., ANTONOVA, V.A.

COUNTRY OF INFO--USSR

SOURCE--MEDITSINSKAYA RADILOGIYA, 1970, VUL 15, NR 6, PP 67-72

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, NUCLEAR SCIENCE AND  
TECHNOLOGY  
TOPIC TAGS--RADIOACTIVE ISOTOPE, SKIN PHYSIOLOGY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/1520

STEP NO--UR/0241/70/015/006/0067/0072

CIRC ACCESSION NO--AP0128915

UNCLASSIFIED

2/2 014

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0128915  
ABSTRACT/EXTRACT--(U) GP-C- ABSTRACT. INFORMATION WAS OBTAINED WHICH CHARACTERIZED THE QUANTITATIVE DISTRIBUTION OF RADIODISOTOPES OF MOLYBDENUM, TELLURIUM, STRONTIUM, BARIUM, YTTRIUM, CERIUM AND PRASEOYMIUM WITH NEODYMIUM BETWEEN INDIVIDUAL BIOSTRUCTURES OF THE SKIN AND ITS LAYERS. ON THE BASIS OF THE RESULTS DERIVED THE AUTHORS CONDUCTED A COMPARATIVE ANALYSIS OF BEHAVIOR OF THESE RADIONUCLIDES IN THE SKIN. FACILITY: LENINGRADSKIY NAUCHNO ISSLED. INSTITUT RADIATSIONNOY GIGIYENY MZ RSFSR.

UNCLASSIFIED

1/2 029 UNCLASSIFIED PROCESSING DATE--13NOV70  
TITLE--SR PRIME90 IN THE HAIR AS AN INDEX OF ITS CONTENT IN THE BONE  
TISSUE OF MAN -U-  
AUTHOR--(02)-ANTONOVA, V.A., SHVYDKO, N.S.

5

COUNTRY OF INFO--USSR

SOURCE--GIGIYENA I SANITARIYA, 1970, NR 3, PP 43-45

DATE PUBLISHED----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STRONTIUM ISOTOPE, RADIobiologic INSTRUMENTATION,  
RADIOACTIVITY MEASUREMENT, BONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0240/70/000/003/0043/0045

PROXY REEL/FRAME--1982/0652

CIRC ACCESSION NO--AP0052112

UNCLASSIFIED

2/2 029

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0052112

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PRESENTS DATA PROVING THE EXISTENCE OF A DEFINITE CORRELATION BETWEEN THE CONCENTRATION OF SR PRIME90 IN THE HAIR AND ITS CONTENT IN THE SKELETON. A REGRESSION EQUATION WAS OBTAINED THAT MADE IT POSSIBLE TO DETERMINE WITH SUFFICIENT ACCURACY THE SPECIFIC ACTIVITY OF THE ISOTOPE IN THE BONE TISSUE JUDGING BY SPECIFIC ACTIVITY OF SR PRIME90 IN THE HAIR.

UNCLASSIFIED

TITLE--THE CORRELATION BETWEEN CONCENTRATION OF CESIUM 137 IN THE HAIR AND  
THAT IN THE BODY -U- UNCLASSIFIED PROCESSING DATE--09OCT70  
AUTHOR-(03)-ANTONOV A. V.A., SHVYDKO, N.S., LISACHENKO, E.P.

COUNTRY OF INFO--USSR

SOURCE--GIGIYENA I SANITARIYA, 1970, NR. 5, PP 45-48

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CESIUM ISOTOPE, RADIOISOTOPE, MUSCLE TISSUE, CHEMICAL ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0589

STEP NO--UR/0240/70/000/005/0043/0048

CIRC ACCESSION NO--AP0108804

UNCLASSIFIED

2/2 017

CIRC ACCESSION NO--AP0108804

UNCLASSIFIED

PROCESSING DATE--09OCT70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE PAPER PRESENTS DATA PROVING THE EXISTENCE OF A DEFINITE CORRELATION BETWEEN CONCENTRATION OF CS PRIME137 IN THE HAIR AND THAT IN THE MUSCULAR TISSUE ACCORDING (TO AUTOPSY MATERIAL), IN THE HAIR AND THAT IN THE HUMAN BODY (MEASUREMENT IN VIVO). A REGRESSION EQUATION WAS OBTAINED WHEREBY IT IS POSSIBLE JUDGING BY THE SPECIFIC ACTIVITY OF CS PRIME137 IN THE HAIR TO ASSESS THE SPECIFIC ACTIVITY OF THE ISOTOPE IN THE BODY. CONCENTRATION OF CS PRIME137 IN THE HAIR (IN CESIUM UNITS) IS SHOWN TO BE INDEPENDENT OF THE AGE AND SEX OF THE PERSON.

UNCLASSIFIED

Acc. Nr: AP0034681

Ref. Code: UR 0241

PRIMARY SOURCE: Meditsinskaya Radiologiya, 1970, Vol 15,  
Nr 2, pp 58-64

THE INTERACTION OF Mo<sup>99</sup> WITH BIOCOMPONENTS OF THE SKIN

Shvydko, N. S.; Il'in, L. A.; Norets, T. A.; Antonova, V. A.  
Summary

The paper presents data characterizing the fixation of Mo<sup>99</sup> by individual biocomponents of the skin, as well as the epidermis, derma and subcutaneous cellular tissue. The authors demonstrate the quantitative distribution of Mo<sup>99</sup> between fat-soluble, water-soluble and residual fractions of the skin and its layers. The mechanisms of fixation of Mo<sup>99</sup> by different structures of the tissue are discussed.

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REEL/FRAME

02

10711386

USSR

UDC 612.821.6+612.822.3

SHVYRKOV, V. B., and BEZDENEZHNYKH, B. N., Institute of Psychology, Academy of Sciences USSR, Moscow

"The Role of Analysors of Conditioned and Unconditioned Stimuli in the Functional System of a Conditioned Behavioral Act"  
Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlov, Vol 23,  
No 1, Jan/Feb 73, pp 15-23

**Abstract:** Formation of a conditioned reflex is based not just on generalization and transformation of evoked potentials to light (used as the conditioning signal) but on the fact that the responses to the conditioning signal in the visual and somatosensory areas in the cortex become synchronous and identical in their configuration with the reactions initially occurring in response to the reinforcing electrocutaneous stimulation. The crucial aspect of this development is reached when, as a result of the training, the latent period of the evoked potentials coincides with the latent period of the motor reaction. Processes taking place during that interval do not occur in succession following recruitment of the individual structures along the reflex arc. Rather, the evoked potentials represent simultaneous activation of all structures in the visual and somesthetic cortex participating in the analysis and synthesis of afferent stimuli and in the process of making a decision and inducing the conditioned behavioral act.

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USSR

UDC 612.821.6+612.822.3

SEVYRKOV, V. B., and GRINCHENKO, YU. V., Laboratory of the General Physiology  
of the Central Nervous System, Institute of Normal and Pathological Physiology,  
Academy of Medical Sciences USSR, Moscow

"Electrophysiological Study of the Acceptor of Action Results in Instrumental  
Behavior"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti imeni I. P. Pavlova, Vol 22, No  
4, Jul/Aug 72, pp 792-800

**Abstract:** A conditioned reflex was developed in rabbits by flashing a light and then placing a cabbage leaf in the feed trough. After the motor response was firmly established, a modification was introduced: a ring, which by means of a string was attached to three switches, would be placed in the cage, and the animals had to pull the ring in order to make the light flash, whereupon a cabbage leaf would be placed in the trough. Because the connection between the light bulb and one of the three switches was altered at random, the animals had to pull the ring either 3 cm, or 8 cm, or 14 cm. After a few trials and errors, the rabbits learned to pull the ring as far as necessary. The moment the light flashed, they would stop pulling and would run to the trough and wait there for the cabbage leaf. The EEG records, the light flash  
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USSR

SHVYRKOV, V. B. and GRINCHENKO, YU. V., Zhurnal Vysshay Nervnoy Deyatel'nosti imeni I. P. Pavlova, Vol 22, No 4, Jul/Aug 72, pp 792-800

was preceded by a slow negative oscillation, and the evoked potential to the light flash contained an additional negative component. It is concluded that the light flash acquired the significance of a desired intermediate result of motor activity and that the negative component in the evoked potential represented collation of the current impression with its prognosticated model in an acceptor center.

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SHVYRKOV, V. B.

COLEEN

29 Oct 71

105

FED:CYBERNETICS

93. USSR

UDC 612.821.6 : 612.826.2+612.825.2

SHVYRKOV, V. B. and VELIKHINA, S. V.

SO: FOREIGN PRESS DIGEST

29 OCT 1971

"A Study of the Processes of Reproduction of a Model of Unconditioned Reinforcement Given a Conditioned Signal"

Kiberneticheskiye Aspekty v Izuchenii Raboty Mozga (Cybernetic Aspects of the Study of the Brain's Functioning), Moscow, Nauka Publishing House, 1970, pp 109-118

Abstract: Statistical processing on a digital computer of the electrical activity of a rabbit during the development of a conditioned defense reflex showed that the rhythm of the conditioned light stimulus is not transferred to the cortical reinforcement point. The configuration of the induced potential which arises at this point when a conditioned signal is given approaches the response to the reinforcing shock of the current.

The data obtained are examined as contradicting notions on the "beaten path" for a conditioned excitation to the cortical reinforcement point. They support the assumption that an afferent model of the reinforcing stimulus is reproduced at this point when a conditioned signal is given.

SHVYRKova, N. A.

97. USSR

SHVYRKova, N. A.

UDC 611--018.8 : 612.822.1

SO: FOREIGN PRESS DIGEST

23 OCT 91

"Classification of Cortical Neurons on the Basis of Their Chemical Specificity"

Kiberneticheskiye Aspekty v Izuchenii Raboty Mozga (Cybernetic Aspects of the Study of the Brain's Functioning), Moscow, Nauka Publishing House, 1970, pp 158-164

Abstract: In experiments on rabbits, the chemical sensitivity of the neurons of the somatic-sensory region of the cortex and the correlation of this sensitivity with their background and induced activity were investigated. It was demonstrated that groups of neurons, isolated by the criterion of their capacity to respond to a stimulus that is adequate and a stimulus that is not adequate for the given analyzer, possess a sensitivity to pharmacological substances that is specific for each group and also possess a relatively constant quantitative make-up. The reactions of neurons of different groups to the same stimulus also differ with respect to chemical sensitivity.

USSR

UDC 612.825.1.014.46:615.21

SHVYRKOVA, N. A., Chair of Normal Physiology First Moscow Medical Institute imeni I. M. Sechenov

"Change in Convergence of Stimuli on the Cortical Neurons after the Administration of Certain Anesthetics and Psychotropic Agents"

Moscow, Byulleten' Eksperimental'noy Biologii i Meditsiny, No 5, 1970, pp 7-10

Abstract: The reactions of 350 neurons of the somatosensory cortex to electrical and visual stimulation were studied in 40 acute experiments on male rabbits after the administration of two anesthetics (urethane and nembutal) and two psychotropic agents (chlorpromazine and amzil). Both anesthetics and amzil significantly reduced the number of multisensory neurons, whereas chlorpromazine did not have this effect. Each of the substances produced definite changes in the correlation of the mono-and multisensory neurons. Such changes are a more specific indicator of disruption of the integrating processes of the brain than EEG shifts. Anesthetics cause a marked weakening or total elimination of convergence of stimuli on the cortical neurons, while a tranquilizer like chlorpromazine, which does not promote disintegration but eliminates mostly motivational elements from afferent synthesis, has no influence on the number of multisensory cortical neurons.

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UNCLASSIFIED

PROCESSING DATE--23OCT70

TITLE--ALTERATION OF THE CONVERGENCE OF EXCITATIONS ON CORTICAL NEURONS AT  
THE INFLUENCE OF SOME NARCOTIC AND PSYCHOTROPIC AGENTS -U-

AUTHOR--SHVYRKova, N.A.

COUNTRY OF INFO--USSR

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SOURCE--BYULENTEN EKSPERIMENTAL'NOY BIOLOGII I MEDITSINY, 1970, VOL 69,  
NR 5, PP 7-10  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--SENSORY PHYSIOLOGY, NARCOTIC, PSYCHOTHERAPEUTIC DRUG, NEURON

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1998/0378

STEP NO--UR/0219/70/069/005/0007/0010

CIRC ACCESSION NO--AP0121066

UNCLASSIFIED

2/2 021

CIRC ACCESSION NO--AP0121066

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SUBJECT INVESTIGATION WAS THE CONVERGENCE OF EXCITATIONS ON 350 NEURONS OF THE SOMATOSENSORY REGION OF RABBIT CORTEX AFTER ELECTRODERMAL AND VISUAL STIMULE IN CONDITIONS OF USING NARCOTIC (URETHAN, NEMBUTAL) AND SEDATIVE (AMYSYL, CHLORPROMAZINE) AGENTS. BOTH NARCOTICS CAUSED A STATISTICALLY SIGNIFICANT REDUCTION OR COMPLETE DISAPPEARANCE OF MULTISENSORY NEURONS. AMYSYL ALSO REDUCES THE NUMBER OF MULTISENSORY CELLS, WHEREAS CHLORPROMAZINE DID NOT CHANGE THEIR QUANTITY. THE RESULTS WERE COMPARED WITH THE DATA OF BEHAVIOR DISTURBANCES BY DIFFERENT SUBSTANCES AND AN ASSUMPTION IS SET FORTH THAT ALTERATION OF THE NUMBER OF MULTISENSORY NEURONS IN THE CORTEX OF THE LARGE HEMISPHERES IS A GOOD INDEX OF DISORDER OF INTEGRATIVE PROCESSES IN THE BRAIN.

INSTITUTE:

FACILITY: I. M. SECHENOV FIRST MOSCOW MEDICAL

UNCLASSIFIED

Phytology

USSR

UDC 582.263:575.4/.5:001.57

SHVYTOV, I. A., Agrophysics Institute, Leningrad

"Statistical Method for the Selection of One-Celled Algae Strains Based on the Rate of Increase in Numbers"

Moscow, Zhurnal Obshchey Biologii, Vol. 32, No 3, May/Jun 71, pp 260-265

**Abstract:** Genetic selection of highly productive strains of unicellular algae consists of separating cells of a given genotype according to their phenotype from a large cell population after a mutagenic factor has acted on the latter. A mathematical model for the competitive selection process of unimolecular algae from a flow culture regime is set up. A two-component population of microalgae is discussed, in which each of the two components has its own growth rate. According to the model, the removal of cells from the operating system is achieved by the flow of the circulating nutrient. The flow rate of the nutrient is automatically adjusted in such a way that the number of cells in the operating system remains constant, that is the culture density remains unchanged. It was found that over long periods, a degeneration of one of the strains takes place. The probabilities for the rates of the two strains depend on the ratio of the specific growth rates of the two strains and on the initial quantities of cells present.  
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USSR

SHVYTOV, I. A., Zhurnal Obshchey Biologii, Vol 32, No 3, May/Jun 71, pp 260-265

Exact and approximate formulas were derived for the calculation of these probabilities. The latter were calculated for different ratio between the specific growth rates and for various initial conditions. The results of the calculations are presented in a table for specific growth ratios 1.01, 1.05, 1.1, and 1.2, and for the number of cells of the first strain present initially ranging from 1 to 243. Over a wide range of initial conditions, with the number of cells of one strain comparable to the number of cells of the other strain, with a probability close to unity, the strain with the lower specific growth rate will undergo degeneration with time passes; and only under those initial conditions under which the number of cells of the one strain strongly outweighs the number of cells of the second strain, with a probability different from zero, will degeneration of the strain with the higher specific growth rate take place. For growth rates ranging from 1/2 to 2, one can find initial conditions between the cells of the first and second strains such that the degeneration probability will be 0.5 for either strain.

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USSR

UDC: 8.74

SHVYTOV, I. A.

"Model of Selection of Strains of Unicellular Algae in a Turbidostat With Regard to the Probability of Degeneration"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works), vyp. 25, Moscow, "Nauka", 1972, pp 153-159 (from RZh-Kibernetika, No 6, Jun 72, Abstract No 6V602)

Translation: A specific biological example is taken as the basis for construction of a combination model of the dynamics of development of a population: a random process in the case of small numbers, and deterministic differential equations in the case of large numbers. The combination model of selection considered in this paper accounts for the probability of degeneration both in the cumulative and continuous modes of cultivation.

Author's abstract.

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USSR

SHVAFIRNER, A. M.

"ALL-Union Scientific and Technical Seminar, "The Corrosion and Protection of Metal Structures in Construction"

Moscow, Zashchita Metallov, Vol 6, No 5, Sep-Oct 70, pp 626-627

**Abstract:** The Central Scientific Research and Planning Institute of Metal Structures for the Construction Industry conducted a seminar devoted to problems of corrosion and protection of metal structures. About 300 participants attended the seminar, which took place from 26 to 29 October 1969. N. P. Mel'nikov spoke of the potentials of spatial systems from expanded rods and tubular and closed thin-walled sections designed from steels and aluminum alloys of elevated and high strength. A. A. Kaplin reported that Minmontazhspetsstroy USSR will double, during the forthcoming Five-Year Plan, the yearly output of metal structures. He estimated the overall current losses due to corrosion at about 600 million rubles per year for the entire Soviet Union. B. I. Belyayev noted that the means of protection of steel constructions at operating plants as well as the technology of application of protective coating and surface preparation have remained unchanged for the last 40 years. Plans have been made for mechanized production

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USSR

SHLYAFIRNER, A. M., Zashchita Metallov, Vol 6, No 5, Sep-Oct 70,  
pp 626-627

lines for cleaning and painting metal constructions. A. I. Golubev  
and N. Kh. Kadyrpv proposed a classification of atmospheric  
aggressiveness for the various areas of the Soviet Union. A. M.  
Shlyafirner and G. P. Yakubova discussed the low corrosion re-  
sistance of high-strength steels and aluminum alloys. Manganese  
is said to decrease the corrosion resistance of low-alloy con-  
structional steels by 2 to 3 times. The need for designing new  
alloys with new alloying elements to raise corrosion resistance  
was pointed out. B. I. Pshyiyalovskiy announced that the immediate  
plans of the paint and varnish industry include the production of  
synthetic film-forming materials. Other topics discussed included  
metal plating (hot zinc plating) for long-range anticorrosive pro-  
tection; aluminum coatings for use in industrial atmospheres;  
trends in the development of aluminum structures and prospects for  
the use of aluminum alloys in construction; and methods of pro-  
tective and decorative finishing of aluminum alloys. A review was  
made by V. M. Medvedev of the current methods of protecting metal  
construction against corrosion used abroad. There was made of a  
synopsis of publications offering standardized listing of practi-  
cal information, etc., report to the editor.

USSR

UDC: 7.84

YAKUTAVICHENE, D. A., CHESNULYAVICHUTE, G. V., SKYAUCHUKENIYENE, V. I.,  
MACHULITE, Yu. A.

"Using the Razdan-3 Digital Computer to Keep a Running Account of the  
Progress and Distribution of Stipends Among Students at Kaunas Polytech-  
nical Institute"

V sb. Vychisl. tekhn. T. 2 (Computer Technology. Vol 2--collection of  
works), Kaunas, 1971, pp 558-565 (from RZh-Kibernetika, No 1, Jan 72,  
Abstract No 1V1059)

Translation: A solution is found for the problem of keeping a running  
account of exams at Kaunas Polytechnical Institute. The purpose of the  
work is to catalog the results of a test session in the profile of groups  
and summaries which generalize the results of the session in the profile  
of groups, courses, faculties, and in addition to send out to the deans  
catalogs of the distribution of stipends by groups, and as a final result  
of this distribution to transmit pay records of the stipends by groups  
for the entire coming semester. Authors' resumé.

1/1

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1/3 010 UNCLASSIFIED PROCESSING DATE--16OCT70  
TITLE--SYNTHESIS OF 2,ARYLINDOLE DERIVATIVES -U-

AUTHOR--(02)-SHYEDOV, V.I., KURILO, G.N.

COUNTRY OF INFO--USSR *S*

SOURCE--Khim. Farm. Zh. 1970, 4(3), 11-15

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--INDOLE DERIVATIVE, ARYL RADICAL, CHEMICAL SYNTHESIS, MOLECULAR STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1997/0292

STEP NO--UR/0450/70/004/003/0011/0015

CIRC ACCESSION NO--APIO119284

UNCLASSIFIED

2/3. 010

UNCLASSIFIED

PROCESSING DATE--16 OCT 70

CIRC' ACCESSION NO--AP0119284

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. I AND II WERE PREPD. 3PRIME,  
4PRIME, DIMETHOXYACETOPHENONE PHENYLHYDRAZONE (40.5 G) AND 66 G  
100PERCENT H SUB3 PO SUB4 GAVE 90PERCENT II (R PRIME1 EQUALS R PRIME2  
EQUALS H), M. 190-1DEGREES (MEOH ME SUB2 CO). METHYLATION OF 2  
PHENYLINDOLE (III) GAVE 99.5PERCENT I (R PRIME1 EQUALS ME, R PRIME2  
EQUALS H) (IV), M. 99-100DEGREES (MEOH). REACTION OF III AND IV WITH ME  
SUB2 NH AND H SUB2 CO GAVE, RESP., 69PERCENT I (R PRIME1 EQUALS H, R  
PRIME2 EQUALS ME SUB2 NCH SUB2) (V), M. 129-30DEGREES (MEOH), AND  
83PERCENT I (R PRIME1 EQUALS ME, R PRIME2 EQUALS ME SUB2 NCH SUB2) (VI),  
M. 199-200DEGREES. TREATMENT OF V AND VI WITH MEI YIELDED, RESP.,  
99PERCENT V METHIODIDE (VII), M. 200-1DEGREES (DECOMPN.), AND  
97.5PERCENT VI METHIODIDE (VIII), M. 195-6DEGREES. BOILING VII AND VIII  
WITH KCN IN AQ. DIOXANE YIELDED 92.5PERCENT I (R PRIME1 EQUALS H, R  
PRIME2 EQUALS CH SUB2 CN) (IX), M. 117-18DEGREES (MEOH), AND 95PERCENT I  
(R PRIME1 EQUALS ME, R PRIME2 EQUALS CH SUB2 CN) M. 96-7DEGREES  
(DECOMPN.). METHYLATION OF II (R PRIME1 EQUALS H, R PRIME2 EQUALS CH  
SUB2 CN) YIELDED 97.7PERCENT II (R PRIME1 EQUALS ME, R PRIME2 EQUALS CH  
SUB2 CN), M. 139-40DEGREES (MEOH). DRY HCL WAS PASSED 4 HR THRGUH 1.8  
G IX IN 12 ML ABS. ETOH AND 8 ML ET SUB2 O TO YIELD 91PERCENT I (R  
PRIME1 EQUALS H, R PRIME2 EQUALS CH SUB2 CO SUB2 ET), M. 82-2.5DEGREES  
(ME SUB2 CO). HEATING IX WITH POLYPHOSPHORIC ACID GAVE 76PERCENT I (R  
PRIME1 EQUALS H, R PRIME2 EQUALS CH SUB2 CONH SUB2), M. 198-9DEGREES (ME  
SUB2 CO).

UNCLASSIFIED

3/3 010

CIRC ACCESSION NO--AP0119284

UNCLASSIFIED

PROCESSING DATE--16OCT70

ABSTRACT/EXTRACT--ALK. HYDROLYSIS OF APPROPRIATE NITRILES AND AMIDES  
YIELDED 76PERCENT I (R PRIME1 EQUALS H, R PRIME2 EQUALS CH SUB2 CO SUB2  
H), M. 177-8DEGREES, 92.8PERCENT I (R PRIME1 EQUALS ME, R PRIME2 EQUALS  
CH SUB2 CO SUB2 H) (X), M. 145-6DEGREES, 93.5PERCENT II (R PRIME2 EQUALS  
CH SUB2 CO SUR2 H), M. 156-7DEGREES. X WAS CONVERTED TO ACID CHLORIDE,  
WHICH WITH C SUB6 H SUB6 AND ALCL SUB3 GAVE 40.6PERCENT I (R PRIME1  
EQUALS ME, R PRIME2 EQUALS CH SUB2 COPH), M. 118-19DEGREES (ETOAC).  
FACILITY: VSES. NAUCH. ISSLED. KHM. FAR. INST. IM. ORDZHONIKIDZE,  
MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC 577.1:615.7/9

PUZYREV, A. A., SHVARTSMAN, I. YE., and SHYLYAKHETSKIY, N. S.

"Morphological Changes and Synthesis of DNA in the Cells of the Pancreas of White Rats Acutely Intoxicated with Perfluortriethylamine"

Tr. Leningr. san.-gigiyen. med. in-ta (Transactions of the Leningrad Medical Sanitation and Hygiene Institute), No 100, 1972, pp 100-103 (from RZh-Biologicheskaya khimiya, No 12, Jun 73, Abstract No 12 F 2049)

Translation: Rats weighing 140-150 grams were subjected to inhalatory poisoning with perfluortriethylamine (I) in a maximally tolerable concentration (850 mg/l) and 1-10 days later a historadiocautographic study was made of the synthesis of DNA in the pancreas. A day after the action of I an increase in the labeling index (inclusion of H<sup>3</sup>-thymidin) in the epithelium of ducts while in the epithelium of terminal sections and the islets of Langerhans suppression of DNA synthesis and mitotic activity is observed. On the third day after poisoning, these changes are practically preserved while by the tenth day the suppressed proliferative activity of the epithelium of the pancreas is replaced by a sharp increase in the number of DNA-synthesizing cells in the terminal sections and islets of Langerhans; in the epithelium of ducts the DNA synthesis occurs with an intensiveness equal to the control figures.  
1/1

USSR

UDC 621.374.335

SHYUSHA, A. S., EYDUKAS, D. I.

"Dynamic Parameters of Logic Circuits and Possibilities of Constructing Equipment for Measuring Them"

Vil'nyus, Nauchnyye trudy vysshikh uchebnykh zavedeniy Lit. SSR. Avtomatika i vychislitel'naya tekhnika (Scientific Works of Institutions of Higher Education of the Lithuanian SSR. Automation and Computer Technology), No 2, 1970, "Mintis", pp 117-126

**Abstract:** The article deals with the dynamic parameters of logic circuits. Basic methods of constructing measuring equipment in the nanosecond range are analyzed. Block diagrams and basic technical characteristics are presented for a device whose operating principle is based on converting time intervals to amplitude. One table, six illustrations, bibliography of three titles.

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USSR

UDC 616-001.28+616.12-073.97

CHANLYTKA, A. A., SIDARENKA, YA. R., RABTSEVICH, T. S., LUCHNIKOW,  
YA. F., LYSTSOVA, G. V., PLENINA, G. M.

"Cardiac Function During the Various Periods of Acute Radiation  
Sickness in Dogs"

Minsk. Vesti Akademiy Nauk BSSR Seryya Biyalagicheskikh Nauk,  
No 1m 1970, pp 76-84

Abstract: A complete study of 92 dogs was made including behavior, weight, temperature, hemocytology, serum chemistry - including all functional components, A/G ratio, pulse respiration, EKG studies, etc., before irradiation with a single dose of 600 r and during the various phases of radiation sickness. A total of 41 controls and 50 dogs treated 7-9 days after irradiation were studied. As the animals died, autopsies were performed, and complete gross, histological and pathomorphological studies were correlated with other findings. Disorganization of cardiac function in the dead and surviving animals, together with electrocardiographic studies, were recorded concurrently with other clinical, laboratory, and 1/2

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USSR

CHAWLYTKA, A. A., et al., Minsk, Vesti Akademiyi Nauk BSSR, No 1,  
1970, pp 76-84

physiological changes. Histological studies in treated animals  
show the reversability of myocardial shifts with only minor sequelae.

2/2

1/2 022 UNCLASSIFIED PROCESSING DATE 25 OCT 70  
TITLE--DETERMINATION OF THE BASICITY OF N SUBSTITUTED LACTAMS BY AN IR  
SPECTROSCOPIC METHOD -U-  
AUTHOR-(05)-GORSHKOVA, G.N., KOLOKOIN, F.L., POLISHCHUK, V.V.,  
PONOMARENKO, V.A., SIDELKOVSKAYA, F.P.  
COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 550-4

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--LACTAM, IR SPECTRUM, PHENOL, DEUTERIUM COMPOUND, HYDROXYL  
RADICAL, DETONE, PYRROLES, HETERO CYCLIC NITROGEN COMPOUND,  
CYCLOHEXANONE, SOLUTION ALKALINITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--2000/0741

STEP NO--UR/0062/70/000/003/0550/0554

CIRC ACCESSION NO--AP012441

UNCLASSIFIED

2/2 022

CIRC ACCESSION NO--AP0124411

UNCLASSIFIED

PROCESSING DATE--23OCT70

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IR SPECTRA WERE USED TO ASSESS THE VALUES OF THE ASSOCN. CONSTS. OF THE FOLLOWING COMPODS. WITH PHOH, FROM THE VALUES OF SPECTRAL SHIFTS OF OH AND OD BANDS (VALUES OF K SUBASS IN L.-MOLE SHOWN): PYRROLIDONE 160, N,METHYL PYRROLIDONE 175, N,(2,3,EPOXYPROPYL)PYRROLIDONE 140, N,ALLYL PYRROLIDONE 135, N,VINYLPYRROLIDONE 48, PIPERIDONE 225, N,ALLYLPIPERIDONE 180, N,VINYLPIPERIDONE 52, CAPROLACTAM 185, N,ALLYLCAPROLACTAM 145, N,VINYL CAPROLACTAM 49, PYRROLIDINE 185, PIPERIDINE 170, CYCLOPENTANONE 11, AND CYCLOHEXANONE 12. THUS, A RELATION OF BASICITY OF THESE COMPODS. TO THE NATURE OF THE N SUBSTITUTENT WAS DEMONSTRATED. THE ASSOCN. OF PHOH WITH THESE RING SYSTEMS AT THE CARBONYL GROUP DOES NOT EXCLUDED THE POSSIBILITY OF ASSOCN. AT THE N ATOM. FACILITY: INST. ORG. KHM. IM. ZELINSKOGO, MOSCOW, USSR.

UNCLASSIFIED

## Polymers and Polymerization

USSR

UDC 547.318+66.062+827.725

IBRAGIMOV, F., GAFUROV, T. G., and SIDEL'KOVSKAYA, E. P., Scientific Research Institute of Chemistry and Technology of Cotton Cellulose

"Unsaturated Alcohols. 2-[3-(Pyrrolidonyl- and Piperidonyl-1)-2-hydroxypropoxy] ethyl esters of Acrylic and Methacrylic Acids"

Leningrad, Zhurnal Organicheskoy Khimii, Vol 7, No 9, Sep 71, pp 1984-1986

**Abstract:** Reaction of 2-(2,3-epoxypropylhydroxy)ethyl esters of acrylic and methacrylic acids with pyrrolidone-2 and piperidone-2 gave their 2-[3-(pyrrolidonyl-1)- and 3-(piperidonyl-1)-2-hydroxypropoxy] ethyl esters. To 0.2 g-mole of 2-hydroxyethyl ester of acrylic acid in 30 ml xylene, 0.2 g-atom of sodium was added with energetic stirring and cooling. Then 0.2 g-mole of epichlorohydrin was added dropwise at 30-35° and stirred for 4 hrs. After cooling, the product was extracted with ether and distilled, yielding 2-(2,3-epoxypropoxy)-ethyl ester of acrylic acid (I), b. p. 25-26°/18 mm,  $d_4^{20}$  1.0594,  $n_D^{20}$  1.4675. 2-(2,3-epoxypropoxy)ethyl ester of methacrylic acid was obtained analogously, b.p. 31-32°/15 mm,  $d_4^{20}$  1.1082,  $n_D^{20}$  1.4721. Reacting (I)

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USSR

IBRAGIMOV, F., et al., Zhurnal Organicheskoy Khimii, Vol 7, No 9, Sep' 71, pp  
1984-1986

with pyrrolidone-2 in dioxane at 90-95° gave 2-[3-(pyrrolidonyl-1)-2-hydroxy-  
propoxy]ethyl ester of acrylic acid, b. p. 123-128°/12 mm,  $d_4^{20}$  1.1120,  $n_D^{20}$   
1.4862.

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1/2 020

UNCLASSIFIED

PROCESSING DATE--20NOV70

TITLE--FRACTIONATION OF POLYMERS BY LIQUID EXTRACTION. II. FRACTIONATION  
OF POLY(VINYL PYRROLIDINE) IN A WATER-N,BUTYL ALCOHOL SYSTEM -U-

AUTHOR--(02)-PARSHIKOV, I.A., SODELKOVSKAYA, F.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHM. (LENINGRAD) 1970, 43(5), 1170-1

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--FRACTIONATION, POLYMER, SOLVENT EXTRACTION, VINYL COMPOUND,  
KETENE, PYRROLIDINE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1957

STEP NO--UR/0080/70/043/005/1170/1171

CIRC ACCESSION NO--AP0132218

UNCLASSIFIED

2/2 020

CIRC ACCESSION NO--AP0132218

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) SP-0-

POLY(VINYL PYRROLIDONE) (I) IN THE TITLE SYSTEM CHANGE WITH THE TEMP.  
E.G., K OF I (MOL. WT. 35,000) WERE 7.1 AND 3.7 AT 50DEGREES AND  
70DEGREES, RESP. THIS PROPERTY IS SUGGESTED FOR USE IN LARGE SCALE,  
CONTINUOUS EXTN. CONCN. OF I, WITHOUT THE NECESSITY OF SOLVENT EVAPN.

UNCLASSIFIED

USSR

UDC 669.14.018.44:620.17

MOROZOV, YU. A., SIDEL'KOVSkiY, M. P., and ROZENBERG, V. M., Volgograd  
Scientific Research, Planning and Design Institute of Machinery Manufactur-  
ing Technology

"Heat Resistance of Chromium-Nickel and Chromium-Nickel-Molybdenum Grades  
of Steel with Boron Admixtures"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 6, 1973, pp 2-4

**Abstract:** Results are given from testing the Kh23N13, Kh23N18, Kh17N13M3T,  
and the Kh23N28M3D3T grades of steel with small admixtures of boron (up  
to 0.005 percent) for stress-rupture strength at 550-700°C. The results  
show that below uniform strength temperatures (during transcrystalline  
breakdown) the stress-rupture strength of the Cr-Ni and Cr-Ni-Mo grades  
of steel increases continuously with increased boron admixture up to 0.005  
percent. Maximum stress-rupture is reached at a boron concentration of  
0.001-0.0018 percent at below uniform strength temperatures. It is also  
shown that small admixtures of boron raise the strength of grain boundaries,  
delay the diffusion process associated with the exclusion of excess phase  
along the boundaries and in the grain volume during creep, and additional  
strengthening of grain boundaries occurs at boron concentrations of 0.004-  
0.005 percent due to dispersed borides.

EQUIPMENT  
Aeronautical

USSR

KISLYKH, V. V., SIDEL'NIKOV, A. Ye., SMIRNOV, A. I.  
"A Method of Creating a Hypersonic Flow"

UDC: 629.7.018.1

Moscow, Otkrytiya, Izobreteniya, Promyshlennye Obraintsy, Tsvarynye Znaki,  
No. 7, Mar 72, Author's Certificate No 329432, Division G, filed 25 May 70,  
published 9 Feb 72, p 167

Translation: This Author's Certificate introduces a method of creating a hypersonic flow in a pulse installation such as an adiabatic compression installation. The method consists in using the internal energy of dense gases fed to the main chamber as a result of piston compression, and the thermal energy released during an isothermal reaction in a working gas of the H<sub>2</sub>O or H<sub>2</sub>O+N<sub>2</sub> type. As a distinguishing feature of the patent, the time of conducting an experiment is extended and the effect of high-temperature aggressive products on the walls of the reaction chamber is eliminated by supplying energy to the main chamber to produce a pressure of 3 000-5 000 gauge atmospheres and a temperature higher than the inversion temperature of the working gas (700-900°K) but 50-100°C below the initiation temperature for an isothermal reaction (1 200°K), after which the gas is throttled down

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USSR

KISLYKH, V. V. et al., USSR Author's Certificate No 329432  
in an auxiliary low-pressure chamber at a choke factor of 6-10 resulting  
in combustion of the working gas in this chamber. The reaction products  
with a temperature of 2500-3000°K are then fed through a nozzle into the  
working section of the installation.

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USSR

UDC: 536.45

KISLYKH, V. V., SIDEL'NIKOV, A. Ye., Moscow

"Certain Problems in the Use of Nitrous Oxide in Adiabatic Compression Units for Producing High-Temperature Gases"

Moscow, Teplofizika Vysokikh Temperatur, Vol 10, No 4, Jul/Aug 72, pp 853-859

**Abstract:** Experimental and theoretical research is done on the process of compression of  $N_2O + N_2$  mixtures of various compositions at pressures up to about 3000 atmospheres and temperatures up to about 3000°K in adiabatic compression units. Data are obtained which characterize the process of thermal dissociation of  $N_2O$  at high densities. The feasibility of using  $N_2O + N_2$  mixtures as the working gas is discussed as it pertains to the production of high-temperature high-density diatomic gases. The experimental results show that the proposed method is applicable to calculation of the parameters of chemically reacting gases at high temperatures and densities, confirm the results of determination of reaction rate constants of nitrous oxide dissociation in adiabatic compression units, and also show that nitrous oxide can be used as the working gas.

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USSR

Heat, Combustion, Detonation

UDC 624.152.5:626.8

BARON, V. L., VLAS'YEV, S. YE. and SIDEL'NIKOV, B. K., Union Explosive  
Industry Board

"A Canal is Constructed by Blasting"

Moscow, Gigrotekhnika i Melioratsiya, No 2, Feb 73, pp 29-31

Abstract: The construction of a 26.5 m portion of the main Pallasov canal using a charged trench explosion is reported. The formula used for calculating the distribution of explosives in the trench is given. Granulite AS-4 and ammonite No 6, ZHV were the explosives used. The depth and width of the canal were within 10% of that desired, and the slant of the walls was also accurate. The advantages of this method were sharply cutting time requirements, lowering expenses, eliminating post-blast work and lowering filtration through the walls and bottom of the canal.

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USSR

UDC 616.281:612.273

SIDEL'NIKOV, I. A., MARKARYAN, S. S., and PAVLOV, G. I.

"Usefulness of Certain Hemodynamic Parameters in Detecting Vestibular and Autonomic Disorders Under Ordinary Conditions and During Hypoxia"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 3, 1973,  
pp 364-373

**Abstract:** The effect of motion sickness induced by continuous cumulation of Coriolis acceleration on various hemodynamic parameters was studied in 60 human subjects of varying vestibular stability under ordinary and hypoxic ( $O_2$  10.5%) conditions. The vestibular and autonomic disorders resulting from motion sickness increased blood pressure and peripheral vascular resistance, but decreased the systolic and minute volumes. However, these changes were observed in all the subjects, regardless of the degree of vestibular stability, suggesting that the cardiovascular system can readily adapt to vestibular stimulation. Thus, the use of hemodynamic parameters is only of limited value in detecting latent vestibular insufficiency.

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USSR

UDC 611.85:523

MARKARYAN, S. S., SIDEL'NIKOV, I. A., PAVLOV, G. I., DROZDOVA, N. T., and  
STEPANOV, V. K.

"Effect of Vestibular Stimulation During Hypoxia on Some Physiological  
Reactions"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 1, 1973,  
pp 33-36

**Abstract:** The main purpose of the study was to determine whether moderate hypoxia can be used to detect latent vestibulo-autonomic instability in airplane pilots and astronauts. On the assumption that tolerance for cumulative Coriolis accelerations lasting at least 2 minutes is a good criterion of vestibular function, 242 healthy subjects were exposed to hypoxia either by remaining in a pressure chamber at an "altitude" of 5000 m or breathing a gaseous mixture with a low oxygen content and then rotated in a special chair. The results of the test revealed vestibular instability (4th degree) in 24% of the nonfliers, 12% of the flight school candidates, and 6% of the fliers. Other effects of the combined action of hypoxia and Coriolis accelerations included a marked decrease in the cardiac output, increase in the minute volume of respiration, and diminished visual acuity in the sensitive individuals.  
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USSR

UDC 616.281-008-07:617.761-009.24

MARKARYAN, S. S., and SIDEL'NIKOV, I. A., Moscow

"Determination of the Reactivity of the Vestibular Analysor from Nystagmus Data"

Kiev, Zhurnal Ushnykh, Nosovykh, i Gorlovykh Bolezney, No 4, Jul/Aug 70, pp 24-29

**Abstract:** Experiments with 60 human subjects showed that the reactivity of the vestibular analysor can be determined not only from the duration of nystagmus, but also from the rate of the slow phase, the amplitude, and the frequency. The rate of the slow phase of nystagmus provoked by stop stimuli the most significant indicator. It increased with intensification of the stop stimuli at a rotation speed of 15, 30, 60, 90, and 180°/sec. Changes in the rate of the slow phase correlated with values of the stop stimulus up to 180°/sec. Two types of curves showing the reactivity of the vestibular analysor with respect to the duration of nystagmus were determined, reflecting differences in the subjects' vestibular stability (high and low). Nystagmus lasting 18 to 28 sec provoked by stop stimuli of 15 to 60°/sec is an indication of vestibular-autonomic stability, while more prolonged nystagmus is an indication of low stability.

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Physiology

USSR

UDC 523.612.015.3:611.85

LAPAYEV, E. V., PAVLOV, G. I., SIDEL'NIKOV, I. A., UDALOV, Yu. F., YUGANOV, Ye. M., and CHELNOKOVA, N. A.

"The Effect of Linear and Angular Accelerations on Some Metabolic Indices"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Biologicheskaya, No 4, 1970,  
pp 515-520

Abstract: Exposure of human subjects to linear and angular accelerations produced definite shifts in protein and vitamin metabolism. Some of the shifts were quite specific to vestibular stimulation -- decrease in transaminase activity, increased excretion of amino acids with decreased excretion of total nitrogen, and relative increase in content of the replaceable acids and amino acids involved in transamination reactions in the blood (aspartic and glutamic acids, glutamine, alanine). The shifts were more pronounced after Coriolis accelerations than after linear accelerations.

1/1

1/2 023

TITLE--ELECTRODEPOSITION OF IRON ALLOYS-U

UNCLASSIFIED

PROCESSING DATE--20NOV70

AUTHOR--(04)-S IDELNIKOV, V.K., YAGUBETS, A.N., BONDAR, V.V., MELNIKOVA,

M.M.  
COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,699

REFERENCE--OTKRYTIYA, TIZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--10FEB70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, ELECTROLYTE, METAL DEPOSITION, IRON ALLOY,  
COBALT IRON ALLOY, PHOSPHORUS ALLOY, ELECTRODEPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/1826

CIRC ACCESSION NO--AA0132093

UNCLASSIFIED

STEP NO--UR/0482/70/000/000/000/000

2/2 023

CIRC ACCESSION NO--AA0132093

UNCLASSIFIED

PROCESSING DATE--20NOV70

ABSTRACT/EXTRACT--(U) GP-0-  
20-5 A-CH PRIME2, PH 0.4-0.8, AND 50-60DEGREES FROM AN ELECTROLYTE  
CONTG. FECL SUB2 45C-600, Na HYPOPHOSPHITE 10-15, AND COCL SUB2 5-15  
G-L.  
FACILITY: INSTITUT PTKLAONCY FIZIKI AN MOLDAVSKOY SSR.

UNCLASSIFIED

USSR

SIDEL'NIKOV, V. M.

UDC: 51:621.391

"On Mutual Correlation of Sequences"

V sb. Probl. kibernetiki (Problems of Cybernetics--collection of works),  
 vyp. 24, Moscow, "Nauka", 1971, pp 15-42 (from RZh-Kibernetika, No 6, Jun  
 72, Abstract No 6v344)

Translation: The following characteristics of  $k$ -valued codes  $W$  of length  $n$  are investigated: the minimum with respect to all codes of given volume  $m$  of the maximum modulus of functions of autocorrelation and mutual correlation of sequences from  $W$ .

$$\eta_k(n, m) = \min_{\|W\|=m} \max_{\substack{X, Y \in W \\ X \neq Y}} |(X, Y)|; \quad \tau_k(n, m) = \min_{\|W\|=m} \max_{\substack{X, Y \in W \\ 0 < l < n \\ l > 0, \text{ even}}} |(X^{(l)}, Y)|.$$

and also the code spacing  $d_k(n, m) = \max_{\|W\|=m} d(W)$  for such codes. Lower estimates

$$\eta_2^2 > (2s_1 + 1)(n - s_1) + \frac{s_1(s_1 + 1)}{2} - \frac{2^{t_n} n^{2s_1 + 2}}{m(2s_1)! C_m^{s_1}}, \quad \eta_k^2 = \frac{s_2 + 1}{2}(2n - s_2) - \frac{2^{t_n} n^{2s_2 + 2}}{m(s_2)! C_{2n}^{s_2}}, \quad k > 2, \quad m > n;$$

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USSR.

SIDEL'NIKOV, V. M., Probl. kibernetiki, vyp. 24, Moscow, "Nauka", 1971,  
pp 15-42

$$\tau_2^2 > (2s_1 + 1)(n - s_1) + \frac{s_1(s_1 + 1)}{2} - \frac{2^{s_1} n^{2s_1+1}}{m(2s_1)! C_n^m}, \quad m > 1, \quad s_1 < \frac{2}{3}n, \quad s_1 > 0.$$

are obtained. Plotkin's upper estimate is more precisely defined for the code spacing. Some estimates of the quantities  $\eta(W)$ ,  $\tau(W)$  and  $d(W)$  are determined in the class of linear cyclic codes. E. Gabidulin.

2/2

- 14 -

USSR

SIDEL'NIKOV V. M.

UDC: 517.821.591

## "Mutual Correlation of Sequences"

Moscow, v sb. Probl. kibernetiki (Problems in Cybernetics-- collection of works) No 24, "Nauka," 1971 pp 15-42 (from RZh-- Matematika, No 6, 1972, Abstract No 6V344)

Translation: The following characteristics of  $k$ -valued  $W$  codes of length  $n$  are considered: the minimum, for all codes of specified volume  $m$ , of the maximum for the absolute value of autocorrelation functions and mutual correlation functions of the  $W$  sequences

$$\gamma_k(n, m) = \min_{|W|=m} \max_{\substack{X, Y \in W \\ X \neq Y}} |(X, Y)| ;$$

$$\tau_k(n, m) = \min_{|W|=m} \max_{\substack{X, Y \in W \\ t \geq 0 \text{ if } X \neq Y}} |(x(t), Y)| ,$$

and the code distance  $d_k(n, m) = \max_{|W|=m} d(W)$  for such codes. The fol-

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- 49 -

USSR

SIDEL'NOKOV, V. M., v sb. Probl. kibernetiki, No 24, "Nauka," 1971, pp 15-42  
 lowing lower bounds are obtained:

$$\eta_2^2 > (2s_1 + 1)(n - s_1) + \frac{s_1(s_1 + 1)}{2} - \frac{2^{s_1} n^{2s_1+2}}{m(2s_1)! C_m^n} s_1,$$

$$u_k^2 = \frac{s_2 + 1}{2}(2n - s_2) - \frac{2^{s_2} n^{2s_2+2}}{m(s_2!)^2 C_{2n}^{s_2}}, \quad k > 2, \quad m > n;$$

$$r_2^2 > (2s_1 + 1)(n - s_1) + \frac{s_1(s_1 + 1)}{2} - \frac{2^{s_1} n^{2s_1+1}}{m(2s_1)! C_n^{s_1}}, \quad m > 1,$$

$$s_1 \leq \frac{2}{5}n, \quad s_2 \geq 0.$$

For the code distance, the upper Plotkin estimate is made more precise. Several estimates of  $\eta(W)$ ,  $r(W)$ , and  $d(W)$  are obtained in a class of linear cyclical codes. E. Gabidulin

2/2

USSR

UDC 681.141

KOTLYAROV, YE. V., GOLUBINSKIY, V. N., and SIDEL'NIKOV, YE. I., Ryazan  
Accounting, and Analytical Machine Factory

"A Tens Carrying Mechanism"

USSR Author's Certificate No 372556 kl G 06 s 15/26, filed 18 Mar 70, published  
25 Apr 73 (from RZh Avtomatika Telemekhanika i Vychislitel'naya Tekhnika,  
No 11, Nov 73, abstract No 11 A357 P)

Translation: A mechanism is proposed for carrying tens, containing a sector on  
the axis which is connected to a counting wheel and catch. To improve the  
reliability of operation of the mechanism, it contains a jointed push rod in  
contact with the catch, a projection kinematically connected to the drive and to  
the recess in which the axis and joint are located, attached to the sector.  
One illustration.

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USSR

UDC: None

TKACH, Yu. V., FAYNBERG, Ya. B., BOLOTIN, L. I., BESSARAB, Ya. Ya.,  
GADETSKIY, N. P., MAGDA, I. I., and SIDEL'NIKOVA, R. V.

"Laser Using Plasma-Beam Discharge"

Moscow, Zhurnal Experimental'noy i Teoreticheskoy Fiziki, vol 62,  
No 5, 1972, pp 1702-1716

**Abstract:** Experiments to investigate the generation of stimulated radiation in the visible range of the spectrum are described. In the equipment described in this paper a pulsed electron beam with a pulse width of 90  $\mu$ s at a current of 35 amp and an energy of up to 40 kev was injected into a stainless steel plasma chamber with a diameter of 110 mm and a length of three meters. At the end of the chamber a water-cooled collector was placed for dissipating the beam power, reaching a level of as much as 1.5 kW. A block diagram of the equipment and an explanation of its operation is given. These experiments demonstrated the possibility of using collective processes in a high-temperature plasma for pumping gas lasers; it is asserted, in fact, that this type of pumping in a plasma-beam discharge is best for obtaining oscillation in the shortwave end of the visible range. The authors, members of the Physico-Technical Institute of the Ukrainian Academy of Sciences, express  
1/2

USSR

UDC: None

TKACH, Yu. V., et al, Zhurnal Eksperimental'nov i Teoreticheskoy Fiziki, vol 62, No 5, 1972, pp 1702-1716

their gratitude to V. P. Tychinskiy, V. V. Slezov, V. D. Shapiro, and V. I. Shevchenko for their comments and advice.

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- 29 -

USSR

Technical and optical

UDC 620.193.5:/621.793.6:659.14/

OSINTSEV, V. D., GORBUNOV, N. S., LAVRENKO, N. A., LITVINNOVA, N. YE., and  
SIEL'NIKOVA, E. A., VNIKTI (All-Union Sci Res, Design and Technological  
Institute of the Pipe Industry, Dnepropetrovsk)

"Effect of Diffusion Chromium Plating and Heat Treatment on the Corrosion  
Resistance of Chromium Plated Steel in Hot Sulfurous Gases"

Kiev, Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No 2, 1973, pp 17-19

Abstract: The effect of chromium plating temperature, carbon content in the steel, cooling rate and heat treatment on the corrosion resistance of a contact-diffusion chromium coating in the gases of an industrial tubular heat exchanger used in the production of elementary sulfur was investigated. Steels 10, 20, 45, armco iron and steel 1φ with titanium (0.14% C and 0.74% Ti) were used in this study. Chromium plating was done at 1100° and 1150° C for six hours in a vacuum of 0.01-0.001 mm Hg. Samples were placed inside a tube in a flow of gas containing almost 4% by volume) sulfur (sulfur dioxide, hydrogen sulfide, sulfur vapors and sulfur-organic compounds). Gas temperature was kept at 270-290°C and test time was 12,240 hours. Samples of steels Kh25T, Kh18NiOT and St. 3 (not plated) were also tested for comparison. Steel 10 + Ti after plating at 1150°C and steel 10, annealed or normalized after plating, had the least 1/2

USSR

OSINTSEV, V. D., et al., Fiziko-Khimicheskaya Mekhanika Materialov, Vol 9, No  
1973, pp 17-19

corrosion (0.002-0.003 g/m<sup>2</sup>-hr) when they were rapidly cooled (600-1000° C/hr)  
owing to the smaller amount of carbides able to enter the alpha-solid solution.  
1 figure, 5 bibliographic references.

(1)

2/2

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1/2 006

TITLE--CONDITIONS FOR GERMINATION OF UREDOSPORES OF THE AGENT OF CORN RUST  
AND INFECTION WITH IT -U-  
UNCLASSIFIED  
PROCESSING DATE--18SEP70  
AUTHOR-[02]-ZEREKIDZE, R.I., SIDENKO, I.YE.

COUNTRY OF INFO--USSR

SOURCE--LENINGRAD, MIKOLOGIYA I FITOPATOLOGIYA, VOL 4, NO 1, 1970, PP  
28-31  
DATE PUBLISHED-----70

SUBJECT AREAS--AGRICULTURE

TOPIC TAGS--CEREAL CROP, PLANT PATHOGEN, SPORE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1990/0697

CIRC ACCESSION NO--AP0108903

UNCLASSIFIED

STEP NO--UR/9063/70/004/001/0028/0031

2/2 006

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0108903

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. STUDY OF PUCCINIA SORCHI, THE AGENT OF CORN RUST SHOWED THAT THE OPTIMUM TEMPERATURE FOR GERMINATION OF CORN RUST UREDOSPores IS 16-23DEGREES C, THE MINIMUM 3DEGREES C AND THE MAXIMUM 31DEGREES C. SPROUTS GROW FASTEST AT TEMPERATURES BETWEEN 19DEGREES AND 27DEGREES C. GERMINATION IN DARKNESS IS VERY INEFFECTIVE. CORN RUST COULD BE DETECTED ON PLANTS AFTER 4 HRS OF EXPOSURE AND THE HIGHEST DEGREE OF INFECTION OCCURRED AFTER 12 HRS OF EXPOSURE. THE INCUBATION PERIOD IN THE UREDOSPore STAGE DEPENDS ON THE TEMPERATURE, DURATION OF INFECTION AND DEVELOPMENT OF THE DISEASE.

UNCLASSIFIED

USSR

S  
UDC 582.285:632.4

ZEREKIDZE, R. I., and SIDENKO, I. Ye., Georgian Experimental Selection Station,  
All Union Scientific Research Corn Institute, Tbilisi

"Conditions for Germination of Uredospores of the Agent of Corn Rust and Infec-  
tion with It"

Leningrad, Mikologiya i Fitopatologiya, Vol 4, No 1, 1970, pp 28-31

Abstract: Study of *Puccinia sorghi*, the agent of corn rust showed that the optimum temperature for germination of corn rust uredospores is 16-23°C, the minimum 3°C and the maximum 31°C. Sprouts grow fastest at temperatures between 19° and 27°C. Germination in darkness is very ineffective. Corn rust could be detected on plants after 4 hrs of exposure and the highest degree of infection occurred after 12 hrs of exposure. The incubation period in the uredospore stage depends on the temperature, duration of infection and development of the disease.

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"APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R002203020002-0

U22

TITLE--TOTAL EXTERNAL REFLECTION OF X RAYS BY A ROUGH SOLID SURFACE -U-  
UNCLASSIFIED PROCESSING DATE--27NOV70

AUTHOR--(03)-ROVINSKIY, B.M., SINAYSKIY, V.M., SIDENKO, V.I.

COUNTRY OF INFO--USSR

SOURCE--FIZIKA TVERDOGO TELA, JAN. 1970, 12(1), 138-145  
DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--X RAY, SURFACE PROPERTY, STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1292

CIRC ACCESSION NO--AP0124943

UNCLASSIFIED

STEP NO--UR/0181/70/012/001/0138/0145

APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R002203020002-0"

2/2 022

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AP0124943

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTENSITY AND SHAPE OF X RAY BEAMS REFLECTED (TOTAL EXTERNAL REFLECTION) FROM STEEL AND OTHER SOLID SURFACES WITH VARIOUS DEGREES OF SURFACE FINISH WERE STUDIED IN RELATION TO THE MEAN HEIGHT OF THE MICROASPERITIES CHARACTERIZING THE SOLID SURFACE. THE INTENSITY OF THE REFLECTED BEAM AND ITS SPREAD (DIFFUSENESS) WERE DIRECTLY RELATED TO THE MEAN HEIGHT OF THE ASPERITIES (THE INTENSITY FELL AND THE SPREAD INCREASED AS THE ASPERITIES BECAME LARGER). THE POSSIBILITY OF USING THESE CHARACTERISTICS PRACTICALLY AS A GUIDE TO SURFACE QUALITY IS CONSIDERED.

UNCLASSIFIED

USSR

UDC 616.988.75-036.22-084.484:546.215

FEDYAYEV, B. P., FLORENSOVA, K. M., SIDENKO, V. V., and STEPANOVA, Z. I.

"Viricidal Action of Hydrogen Peroxide Aerosols in Disinfecting the Air in an Influenza Focus"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunobiologii, No 9, 1972,  
pp 137-142

**Abstract:** Hydrogen aerosols were sprayed at the rate of 0.020 to 0.31 g/m<sup>3</sup> in a children's institution during an epidemic of A<sub>2</sub> influenza (Hong Kong-68 strain). Virus was isolated from 12 of 27 air samples obtained before the spraying, but it was not found in any of 24 samples obtained 40 minutes to 3 hours afterward. None of the children brought into the sprayed areas 30 to 40 minutes after disinfection experienced any side effects, but the personnel who did the spraying suffered mild irritation of the eyes and upper respiratory tract while those exposed to larger doses (0.029 to 0.035 g/m<sup>3</sup>) developed transient nausea, vomiting, headaches, and pronounced irritation of the mucosa.

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"APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R002203020002-0

TITLE--<sup>008</sup> IONIC FLOTATION OF DICHROMATE ION USING A BES QUATERNARY AMMONIUM  
CATION -U- UNCLASSIFIED  
AUTHOR-1021-DZIOMKO, V.M., SIDENKO, Z.S.

PROCESSING DATE--18SEP70

COUNTRY OF INFO--USSR

SOURCE--ZH. PRIKL. KHM. (LENINGRAD) 1970, 43(2), 436-9

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--CHROMATE, QUATERNARY AMMONIUM SALT, BROMIDE, WASTE WATER  
CONVERSION, WATER PURIFYING COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0454

CIRC ACCESSION NO--AP0104067

UNCLASSIFIED

STEP NO--UR/0080/70/043/002/0436/0439

APPROVED FOR RELEASE: 09/17/2001

CIA-RDP86-00513R002203020002-0"

CIRC ACCESSION NO--AP0104067

ABSTRACT/EXTRACT--(U) GP-0-

UNCLASSIFIED

PROCESSING DATE--18SEP70

N,N,N',N'-TETRAMETHYL N,N-DIDODECYLHEXAMETHYLEDIAMMONIUM DIBROMIDE  
(I) IS RECOMMENDED FOR REMOVAL OF CHROMATES IN WASTE WATER. BEST  
RESULTS WERE ACHIEVED AT PH 5 AND AT A I-CHROMATE RATIO OF 3. THE  
RESULTING COMPLEX SETTLES OUT BUT IS SOL. IN BASIC WASTE. THE ORANGE  
RED COLLOIDAL PPT. CAN BE REMOVED BY IONIC FLOTATION. THE CHROMATE  
CONTENT OF WASTE WATER CAN BE DIMINISHED TO 0.01 MG-L.

UNCLASSIFIED

1/2 010 UNCLASSIFIED PROCESSING DATE--11DEC70

TITLE--SYNTHESIS OF 5, METHYLTHIO, AND 5, MERCAPTO DERIVATIVES OF  
2, AMINO BENZIMIDAZOLE -U-

AUTHOR--(C3)--SIMONOV, A.N., SAYAPIN, V.G., SIDERMAN, V.I.

COUNTRY OF INFO--USSR

SOURCE--ZH. VSES. KHM. OBSHCHEST. 1970, 15(2), 232-3

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TCPIC TAGS--ORGANIC SYNTHESIS, MERCAPTAN, SULFUR, AMINE, BENZIMIDAZOLE,  
ANISOLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3008/1496

STEP NO--UR/0063/70/015/002/0232/0233

CIRC ACCESSION NO--AP0138497

UNCLASSIFIED

2/2 010 UNCLASSIFIED PROCESSING DATE--11DEC70  
CIRC ACCESSION NO--AP0138497

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NITRATION OF P-MEC SUB6 H SUB4 SO SUB2 NHG SUB6 H SUB4 SME-P IN ACOH AT 12-14DEGREES WITH A 2-3PERCENT DEFICIENT AMT. HNO SUB3 GAVE 70-5PERCENT 3,NITRO,4,(P,TOLYLSULFONAMIDO) THIOANISOLE (I), M. 117DEGREES, ALONG WITH BUT 10-15PERCENT ME P,(P,TOLYLSULFONAMIDO)PHENYL SULFOXIDE, M. 180DEGREES, WHICH WAS MORE SUL. IN ETOH. WITH THE THEORETICAL AMT. HNO SUB3 THE REACTION GAVE 25-30PERCENT LATTER PRODUCT. METHYLATION OF I WITH MEI IN ALC. NAOH GAVE THE N,ME,DERIV., M. 126DEGREES, WHICH DISSOLVED IN CONCO. H SUB2 SO SUB4 GAVE 36PERCENT 3,NITRO,4,METHYLAMINOTHIOANISOLE, M. 63.5DEGREES, WHICH HEATED WITH POND. SN IN CONCO. HCL-HCO SUB2 H 3 HR GAVE AFTER TREATMENT WITH NH SUB4 OH AND EXTN. WITH C SUB6 H SUB6 53PERCENT 5,METHYLTHIC,1,METHYLBENZIMIDAZOLE (II), M. 78.5DEGREES. THIS AND A THREEFOLD AMT. NANH SU32 IN PHMS SUB2 AT 100DEGREES, THEN 2 HR AT 140DEGREES, GAVE 87PERCENT 2,AMINO,5,METHYLTHIO,1,METHYLBENZIMIDAZOLE, M. 181-2DEGREES, WHICH IN LIQ. NH SUB3 WITH NA GAVE 70PERCENT 2,AMINO,5,HERCAPTC,1,METHYLBENZIMIDAZOLE, M. 256DEGREES, AFTER 2 DAYS IN WARM H SUB2 C (TO EFFECT HYDROLYSIS OF THE NA SALT). II SIMILARLY TREATED WITH NA IN LIQ. NH SUB3 GAVE AN OIL THAT WAS INSUL. IN ALKALIES AND WHCHSE STRUCTURE WAS NOT DED. FACILITY: ROSTOV-NA-BUNU GUS. UNIV., ROSTOV-ON-DON, USSR.

UNCLASSIFIED

L72 016

UNCLASSIFIED

PROCESSING DATE--30 OCT 70

TITLE--ROLE OF CARBENIUM IONS DURING THE ALKYLATION OF BENZENE BY  
CYCLOPROPANE HYDROCARBONS -U-

AUTHOR-(03)-STOLYAROV, B.V., SIDEROV, V.A., IOFFE, B.V.

CCOUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 369-72

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ALKYLATION, BENZENE, CYCLOPROPANE, PHOSPHORIC ACID, ALUMINUM  
CHLORIDE, CATALYST, BUTANOL, PHENOL, CHEMICAL REACTION RATE, CHEMICAL  
REACTION MECHANISM, ISOMER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/0571

CIRC ACCESSION NO--AT0126316

STEP NO--UR/0020/70/191/002/0369/0372

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--30 OCT 70  
CIRC ACCESSION NO--AT0126316  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALKYLATION OF C SUB6 H SUB6 IN THE  
PRESENCE OF 96PERCENT OR 80PERCENT H SUB2 SO SUB4, POLYPHOSPHORIC ACID,  
OR ALCI SUB3 IN MENO SUB2 HAS RUN WITH COM. CYCLOPROPANE AND WITH VERY  
PURE CYCLOPROPANES WITH 1-ME, 1,1,ME SUB2, OR 1,2,ME SUB2 SUBSTITUENTS,  
AS WELL AS ETHYLCYCLOPEPANE AND 1,1,2,TRIMETHYLCYCLOPROPANE. THE  
REACTION RESULTS OBTAINED IN 40-80DEGREES INTERVAL WERE TABULATED AND  
COMPARED WITH ALKYLATIONS RUN WITH PROH, 2,BUTANOL, 2,METHYL,2, BUTANOL,  
3,PENTANOL AND 2,2DIMETHYL,3,BUTANOL. THE COMPN. OF THE ALKYLBENZENES  
WAS TABULATED OVER A RANGE OF EXPTL. CONDITIONS; ON THE WHOLE THE OCMPN.  
WAS SIMILAR FOR HYDROCARBON (CYCLOPROPANE) OR ALC. SOURCE OF THE  
ALKYLATING GROUP. THE ONLY MATERIAL DIFFERENCES WERE FOUND BETWEEN THE  
RUNS WITH CYCLOPROPANE OR METHYLCYCLOPROPANE ON THE ONE HAND, AND WITH  
PROH OR 2,BUTANOL ON THE OTHER. ELEVATION OF TEMP. OR INCREASED  
ALKYLATION MERELY INCREASED THE YIELDS OF ALKYLBENZENES, BUT NOT THE  
RATIOS OF INDIVIDUAL PRODUCTS. IN ALL REACTIONS WITH CYCLOPROPANE THE  
PRODUCTS WERE COMPOSED OF PRPH, ISO-PRPH AND 2-20PERCENT MEETCHPH;  
ETHYLCYCLOPROPANE SIMILARLY GAVE PRODUCTS WITH 8-10PERCENT  
TERT,ALKYLBENZENE; ALKYLATIONS WITH CYCLOPROPANE HYDROCARBONS GAVE  
APPRECIABLE AMTS. OF PRODUCTS WITH BOTH FEWER AND MORE C ATOMS IN THE  
SIDE CHAIN THAN NORMALLY EXPECTED. THE INITIAL PRODUCTS APPEAR TO BE  
CARBO CATIONS FROM CYCLOPROPANES WHICH THEN CAN ISOMERIZE BY TRANSFER OF  
THE POS. CHARGE DOWN THE CHAIN PRIOR TO ALKYLATION PROPER.  
ETHYLCYCLOPROPANE GAVE 3 ISOMERS OF PENTYLBENZENES TO CONFIRM THIS  
MECHANISM.  
FACILITY: LENINGRAD. GOS. UNIV. IM. ZHDANOVA,  
LENINGRAD, USSR.

UNCLASSIFIED

1/2 016

USSR

UDC 581.035

SID'KO, E. Ya.; TERSKOV, I. A., Corresponding Member Academy of Sciences USSR; BERESNEV, G. F., YEROSHIN, N. S., and ZAKHAROVA, V. A., Institute of Physics imeni L. V. Kirenskiy, Siberian Department of the Academy of Sciences USSR, Krasnoyarsk

"The Possibility of Utilizing Transition Processes in Order to Increase the Efficiency of Photosynthesis by the One-Celled Alga Chlorella"

Moscow, Doklady Akademii Nauk SSSR, Vol 199, No 5, 1971, pp 1,206-1,208

Abstract: In the experiments conducted, it was established that effective utilization of radiant energy is not achieved in the cultivation of chlorella in dense cultures; the efficiency of photosynthesis is lower than that obtained when the cells are illuminated uniformly. The efficiency could be increased by utilizing light adaptation during a transitional period. This can be done when cultivation is carried out in a multilayer apparatus. A significant effect was already obtained in a two-layer apparatus irradiated from one side. On cultivation in the first layer at a high irradiancy, in which the photo-synthetic activity of the cells reached a high level, the output was pumped into the second layer with a lower irradiance. The final crop was collected from the second layer. The optical density in the first layer was  $D \leq 0.5$ .

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Hydrobiology

USSR

ŠIDLIAUSKAITĖ, L., Institute of Zoology and Parasitology, Lithuanian SSR  
Academy of Sciences

"Behavior of Acquatic Animals in an Electric Field. 2. Crustacea"

Vilnius, Trudy Akademii Nauk Litovskoy SSR, Seriya V, Vol 2(62), 1973, pp  
127-134

**Abstract:** The effects of direct, pulsed (30 Hz, 2 msec), and alternating (50 Hz) currents on the behavior of lower (*Daphnia magna*, *Cyclops strenuus*) and higher (*Gammarus pulex*, *Mesomysis kowalewskyi*, *Astacus astacus*) crustaceans were evaluated. *D. magna* and *C. strenuus* showed variable activity in direct or pulsed electrical fields and a definite electrotaxis could not be determined. However, in a pulsed field the *D. magna* congregated at the anode at 6 V/cm, and *C. strenuus* at a potential of 4 V/cm. Of the higher crustaceans *G. pulex* evidenced cathodal electrotaxis, *A. astacus* an anodeal electrotaxis, and *M. kowalewskyi* failed to show a definite electrotaxis; however, the higher crustaceans exhibited transverse electrotaxis when subjected to an alternating current.

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USSR

UDC: 51

MERENKOV, A. P. and SIDLER, V. G.

"Inverse Problems of Flow Distribution in Hydraulic Chains"

Moscow, Tr. 4-v Zimn. shkoly po mat. programmir. i smezhn. vopr. Vyp. 5 (Transactions of the fourth Winter School on Mathematical Programming and Related Problems, No 5) 1972, pp 8-14 (from RZh--Matematika, No 1, 1974, Abstract No 1V478)

Translation: An arbitrary hydraulic chain consisting of  $q$  stages and  $n$  branches is described by the following system of equations

$$\begin{aligned} Ax &= Q, \\ Bh &= 0, \\ h_j + H_j &= f_j(x_j), \\ f_j(x_j) &= s_j x_j |x_j^{m-1}|, \quad j = 1, 2, \dots, n; \end{aligned} \tag{1}$$

$A$  being a  $(q-1) \times n$  matrix of the incidence of stages and branches;  $B$  is a  $k \times n$  matrix of the contours ( $k = n-q+1$ );  $x, h$  are vectors (of  $n$  dimensions) of the  $1/2$

USSR

MERENKOV, A. P. and SIDLER, V. G., Tr. 4-y Zimn. shkoly po mat. programmir. i smezhn. vopr. Vyp. 5, 1972, pp 8-14

flows  $x_j$  and pressure drops  $h_j$  in the branches;  $Q$  is the vector (of  $q-1$  dimensions) of the loads or inflows in the stages;  $H_j$  is the acting pressure for an active branch;  $f_j(x_j)$  is the function determining the form of the locking relationships and the type of hydraulic chain;  $s_j$  is the coefficient of hydraulic resistance;  $m$  is a specified power.

The authors term the flow distribution problem ordinary when the magnitudes of  $A$ ,  $Q$ ,  $H_j$ , and  $s_j$  are given, while  $x$  and  $h$  are to be found. In the inverse problems, the magnitudes of  $s_j$  are to be found. Problems in the determination of the  $s_j$  parameters in hydraulic systems arise in the need for fixing the emergency situations and localizing the points at which they originate. Multiple measurements are made of the pressures in the stages of the chain, and from them it is required to determine the steady-state flow  $x$  and the  $s_j$  coefficients. More strictly, it is required to determine  $x$  and  $s_j$  from the particular solutions of the system of equations (1). Linear and quadratac programming is useful in the solution of this problem. Questions of the improvement of the solution, with errors of the initial data and poor construction of the limit matrix taken into account, are considered. Ye. Levner.

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Welding

USSR

UDC 621.791.01.001.5:669.245

PERFIL'YEV, A. N., Engineer, SIDLIN, Z. A., Engineer, LEM'SHIN, YU. T., Engineer

"Study With the Application of the Method of Experimental Planning of the Properties of the Weld Metal When Welding Nickel Alloy"

Moscow, Svarochnoye proizvodstvo, No 9, 1972, pp 1-4

**Abstract:** The method of experimental planning was used to study the properties of low-carbon nickel-chromium-molybdenum weld metal and obtain a mathematical description of the properties of the weld metal in the investigated range of compounds: Cr = 16.7-26.7%, Si = 0.3-0.93%, Fe = 1.17-2.36%. The effect of the content of the investigated elements (each separately and on interaction of them) on the properties of the weld metal was estimated by analyzing the regression equations obtained. Increasing the chromium content in the weld metal compensates for the negative effect of the silicon and iron. The admissible content of the silicon and iron increases appreciably in comparison with the base metal. The range of compositions of the weld metal having the optimal set of properties was defined as Cr = 19.2-21.7%, Si < 0.3% and Fe < 1.17%.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--30OCT7C  
TITLE—SYNTHESIS OF POLYCARBONATES MODIFIED WITH SILICON -U-  
AUTHOR-(05)—SMIRNOVA, O.V., SIDNEV, A.I., BURAKOVA, T.P., KOROVINA, YE.V.,  
KOLESNIKOV, G.S.  
COUNTRY OF INFO—USSR  
SOURCE—VYSOKOMOL. SOEDIN. SER. A 1970. 12(4). 917-21  
DATE PUBLISHED—70

SUBJECT AREAS—CHEMISTRY, MATERIALS

TOPIC TAGS—HYDROXYL RADICAL, BENZENE DERIVATIVE, PROPANE, PHOSGENE,  
ORGANOSILICON COMPOUND, POLYCARBONATE RESIN, POLYSILOXANE, ELASTICITY,  
THERMAL STABILITY

CONTROL MARKING—NO RESTRICTIONS

DOCUMENT CLASS—UNCLASSIFIED  
PROXY REEL/FRAME—2000/0665

STEP NO—UR/0459/70/012/004/0917/0921

CIRC ACCESSION NO—AP0124337

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--30OCT7

CIRC ACCESSION NO--AP0124337

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE REACTION OF  
2,2,BIS(4,HYDROXYPHENYL)PROPANE WITH COCL SUB2, ME SUB2 SiCL SUB2, OR  
THEIR MIXTS. IN PYRIDINE,CH SUB2 CL SUB2 GAVE, RESP., A CRYST.  
POLYCARBONATE (I), POLYSILOXANES, OR AMORPHOUS MODIFIED I (II). THE  
INCREASE OF SI CONTENT IN II INCREASED ITS ELASTICITY BUT DECREASED THE  
MELT FLOW TEMP. AND THERMAL STABILITY. FACILITY: MOSK. KHIM.  
TEKHNOL. INST. IM. MENDELEEEVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--02 OCT 70  
TITLE--KINETICS OF THE OXIDATIVE THERMAL DEGRADATION OF  
POLY(PHENYLBUTOXIVISILOXANE) -U-  
AUTHJR-1041-SITNEV, A.I., KHVASHCHEVSKAYA, YU.V., MOISEYEV, A.F.  
PRAVEDNIKOV, A.N.  
COUNTRY OF INFO--USSR S  
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(2), 362-7  
DATE PUBLISHED----70

SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--REACTION KINETICS, OXIDATIVE DEGRADATION, THERMAL DEGRADATION,  
SILOXANE, ALKYL RADICAL, OXYGEN COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY RECL/FRAME--1992/0321

STEP NO--UR/0459/70/012/002/0362/0367

CIRC ACCESSION NO--AP0111515 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--02 OCT 70

2/2 018

CIRC ACCESSION NO--AP0111515

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OXIDATIVE THERMAL DEGRADATION OF THE TITLE POLYMERS (I) (PREPD. BY SIMULTANEOUS HYDROLYSIS AND ESTERIFICATION OF PHOSPHIC SUB3) CONTG. VARIOUS AMTS. OF OBU GROUPS WAS STUDIED AT 150-240DEGREES. A SIGNIFICANT DEGRADATION COMMENCED AT 170DEGREES. DURING THE INDUCTION PERIOD, THE REACTION RATE WAS 1ST ORDER WITH RESPECT TO OBU GROUP CONTENT. THE DEGRADATION PRODUCTS OF I CONTAINED CO, CO SUB2, H SUB2 O, AND TRACES OF H AND CH SUB4. THE DEGENERATIVE BRANCHING OF I DURING DEGRADATION WAS CAUSED BY HYDROPEROXIDES. ADDN. OF 0.1PERCENT NEUZONE A (II) INCREASED THE INDUCTION PERIOD AT 200DEGREES FROM 5 TO 180 MIN, SUGGESTING THAT II WAS THE MOST EFFECTIVE STABILIZER OF I. THE OXIDATIVE THERMAL DEGRADATION RATE WAS PROPORTIONAL TO THE OBU-SI RATIO. A RADICAL AUTOCATALYTIC DEGRADATION MECHANISM WAS PROPOSED.

UNCLASSIFIED

1/2 018 UNCLASSIFIED PROCESSING DATE--OCT70  
TITLE--KINETICS OF THE OXIDATIVE THERMAL DEGRADATION OF  
POLY(PHENYLUTOXIVSILOXANES) -U-  
AUTHOR-(04)-SIDNEV, A.I., KHVASHCHEVSKAYA, YU.V., MOTSCHEV, A.F.,  
PRAVEDNIKOV, A.N.  
COUNTRY OF INFO--USSR *S*  
SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(2), 362-7  
DATE PUBLISHED----70  
  
SUBJECT AREAS--CHEMISTRY, MATERIALS  
TOPIC TAGS--REACTION KINETICS, OXIDATIVE DEGRADATION, THERMAL DEGRADATION,  
SILOXANE, ALKYL RADICAL, OXYGEN COMPOUND  
  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0459/70/012/002/0362/0367  
PROXY REEL/FRAME--1992/0321  
CIRC ACCESSION NO--APP111515 UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--02OCT70

2/2 Q18

CIRC ACCESSION NO--APO111515

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OXIDATIVE THERMAL DEGRADATION OF THE TITLE POLYMERS (I) (PREPD. BY SIMULTANEOUS HYDROLYSIS AND ESTERIFICATION OF PHOSPHIC SUB3) CONTG. VARIOUS AMTS. OF OBU GROUPS WAS STUDIED AT 150-240DEGREES. A SIGNIFICANT DEGRADATION COMMENCED AT 170DEGREES. DURING THE INDUCTION PERIOD, THE REACTION RATE WAS 1ST ORDER WITH RESPECT TO OBU GROUP CONTENT. THE DEGRADATION PRODUCTS OF I CONTAINED CO, CO SUB2, H SUB2 O, AND TRACES OF H AND CH SUB4. THE DEGENERATIVE BRANCHING OF I DURING DEGRADATION WAS CAUSED BY HYDROPEROXIDES. ADDN. OF 0.1PERCENT NEOZONE A (III) INCREASED THE INDUCTION PERIOD AT 200DEGREES FRON 5 TO 180 MIN, SUGGESTING THAT II WAS THE MOST EFFECTIVE STABILIZER OF I. THE OXIDATIVE THERMAL DEGRADATION RATE WAS PROPORTIONAL TO THE OBU-SI RATIO. A RADICAL AUTOCATALYTIC DEGRADATION MECHANISM WAS PROPOSED.

UNCLASSIFIED

172 017 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--EFFECT OF DESTRUCTION OF THE ANTERIOR HYPOTHALAMUS ON THE FUNCTION  
OF THE HYPOPHYSIS AND THE THYROID GLAND -U-  
AUTHOR--SIDNEVA, L.N.

COUNTRY OF INFO--USSR *S*

SOURCE--PRCEL ENDOKRINOL 16(1): 56-60, ILLUS. 1970

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RAT, THYROID GLAND, PITUITARY GLAND, HORMONE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3C06/C25b

STEP NO--UR/0502/70/016/001/0056/0060

CIRC ACCESSION NG--A00134061

UNCLASSIFIED

2/2 017

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134061

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE ASSOCIATION OF THYROTROPIC FUNCTION OF THE RAT HYPOPHYSIS WITH THE ANTERIOR HYPOTHALAMUS WAS STUDIED. ELECTROLYTIC DESTRUCTION OF THE ANTERIOR HYPOTHALAMUS INVOLVING BOTH PARAVENTRICULAR NUCLEI, LED TO REDUCTION OF THE CONTENT OF THYROTROPIC HORMONE IN THE HYPOPHYSIS (DETERMINED BY MCKENZIE'S METHOD) AND TO REDUCTION OF THE WEIGHT OF THE THYROID GLAND. THE FALL OF THYROTROPIC HORMONE CONTENT IN THE HYPOPHYSIS WAS LESS PRONOUNCED WHEN THE HYPOTHALAMUS WAS DESTROYED WITH PARAVENTRICULAR NUCLEI REMAINING MOSTLY INTACT.

FACILITY: LAB. PHYSICAL. ENDOCRINO.,  
SYST., INST. EXP. ENDOCRINOL. CHEM. HORN., ACAD. MED. SCI. USSR, MOSCOW,  
USSR.

UNCLASSIFIED

USSR

UDC 621.762.4.001

BUNOVA, G. Z., SIDNIKHIN, A. I.

"Characteristic Features of the Recovery and Recrystallization Processes During Hot Extrusion of Metal Powders"

Tr. Kuybyshev, aviats. in-t (Works of Kuybyshev Aviation Institute), 1970,  
vyp. 42, pp 82-86 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G426)

Translation: The processes of recovery and recrystallization during hot extrusion of Cu-powders are investigated. The article contains 1 illustration and a 5-entry bibliography.

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UDC 621.762.3.001

USSR

AKSENOV, G. I., YENIN, N. YE., SIDNIKHN, A. I.

"Problem of Chemical-Heat Treatment of Metal Powders in a Fluidized Bed"

Tr. Kuybyshev. aviat. in-t (Works of Kuybyshev Aviation Institute), 1970,  
vyp. 42, pp 69-75 (from RZh-Metallurgiya, No. 4, Apr 71, Abstract No 4G425)

Translation: Problems connected with the hydrodynamics of the transition of a stationary layer of powder to a pseudoannealed layer are investigated. The gas flow rate was calculated by the O. M. Todes method. It was demonstrated that the experimental and calculated values are in good correspondence. A schematic is presented for a device for chemical-heat treatment of metal powders in a fluidized bed. There are 2 illustrations, 1 table, and a 4-entry bibliography.

1/1

1/3 025 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--INFLUENCE OF HEAT TREATMENT ON THE STRUCTURE AND PROPERTIES OF

SURFACE ALLOYED CASTINGS FROM STEEL 30L -U-

AUTHOR-(04)-BELYATSKAYA, I.S., MIKHAYLOV, A.M., NOVICHKOVA, V.YA.,

SIOOKHIN, A.F.

COUNTRY OF INFO--USSR

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SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(4), 163-6

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--CAST STEEL, ANNEALING, METAL NORMALIZING, X RAY SPECTRUM,  
METAL SURFACE PROPERTY, ALLOY PHASE TRANSFORMATION, CARBIDE PHASE,  
MICROHARDNESS, THERMAL STABILITY, SURFACE HARDENING, ALLOY  
ADDITIVE/(U)30L STEEL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0809

STEP NO--UR/0148/70/013/004/0163/0165

CIRC ACCESSION NO--AT0132904

UNCLASSIFIED

2/3 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132904

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INFLUENCE OF ANNEALING AND NORMALIZING ON THE STRUCTURE AND THE PROPERTIES OF LAYERS OF CASTINGS FROM STEEL 30L WAS STUDIED. THE SAMPLES WERE HEATED IN A MUFLLE FURNACE TO 800DEGREES FOR 1.5 HR, AFTER WHICH THEY WERE COOLED IN THE FURNACE (ANNEALING), OR IN AIR (NORMALIZING). MICRO X RAY SPECTRAL ANAL. SHOWED THAT THE DISTRIBUTION OF THE ALLOYING ELEMENTS ALONG THE DEPTH OF THE LAYERS FOR ALL PRACTICAL PURPOSES DOES NOT CHANGE AS COMPARED TO THE DISTRIBUTION IN THE CAST STATE. THIS TREATMENT EXERTS THE LEAST EFFECT ON THE STRUCTURE OF MN ALLOYED LAYER. THE CHANGES OCCUR PRIMARILY IN THE TRANSITION ZONE BETWEEN THE LAYER AND THE MATRIX METAL. AFTER NORMALIZING, SECONDARY CARBIDES SEGREGATE IN THE DIFFUSION BAND, AND THE MICROHARDNESS OF THE AUSTENITE INCREASES TO 500-700 KG-MM PRIME2, APPARENTLY Owing TO PARTIAL MARTENSITIC TRANSFORMATION. AUSTENITE DENDRIETES WITH A MICROHARDNESS OF 300-20 KG-MM PRIME2 AND CARBIDE EUTECTIC REMAIN PRIMARILY IN THE CAST ZONE OF THE LAYER. THE MATRIX STEEL AT THE BOUNDARY WITH THE ALLOYED LAYER HAS A MARTENSITIC STRUCTURE WITH A MICROHARDNESS OF 650-700 KG-MM PRIME2 AND THAT OF TROOSTITE MARTENSITE. AFTER ANNEALING, THERE OCCURS PARTIAL PEARLITE TRANSFORMATION IN THE DIFFUSION BAND. THE MICROHARDNESS OF HYE PEARLITE PORTIONS AMTS. TO 280-380 KG-MM PRIM2, AND THAT OF THE AUSTENITIC PARTS TO 280-300 KG-MM PRIME2. THE CARBIDE PHASE IN THE CAST STATE AND AFTER THERMAL TREATMENT IS A CARBIDE OF THE (FE, MN) SU83 C TYPE, WITH A MICROHARDNESS OF 800-1100 KG-MM PRIME2.

UNCLASSIFIED

3/3 025

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AT0132904

ABSTRACT/EXTRACT--THE GOOD THERMAL STABILITY OF THE ALLOYED LAYERS IS  
ATTESTED TO BY THE LACK OF CRACKING OR THEIR PHASE SEPN. FROM MATRIX  
METAL.           FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

UDC 616-036.882-08-06:616-002-036.1

USSR

SOBOLEVA, V. I., TOLOVA, S. V., GURVICH, N. L., SIDORA, A. K., TRUBINA, I. Ye.,  
and MUTUSKINA, Ye. A., Laboratory of Experimental Physiology for Reanimation,  
Academy of Medical Sciences USSR, Moscow

"Characteristics of the Course of the Restoration Period in Animals Revived by  
Extracorporeal Circulation After Clinical Death"

Moscow, Patologicheskaya Fiziologiya i Eksperimental'naya Terapiya, Vol 14, No 5.  
Sep/Oct 70, pp 24-27

Abstract: Forty-three adult dogs which had sustained clinical death from profuse hemorrhage for 7 to 12 min. were revived by use of extracorporeal artificial-circulation equipment. In nonanesthetized dogs, corneal reflexes were suppressed for only 10 min. after the onset of high-volume rate perfusion (not less than 100 mg/kg/min). The electrical activity of the cerebral cortex was reduced at first. For most anesthetized animals, revival could be accomplished even 12 min. after clinical death. It was concluded that artificial blood circulation equipment could be used to revive nonanesthetized dogs within 8 min. of clinical death from hemorrhage, in some cases even within 10 min. Anesthetized animals could be revived after 10 min. of clinical death, a fact which was attributed to moderate

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